

AMENDED VERSION

CLAIMS:

1. Canceled.
2. Canceled.
3. (Previously presented) A compound comprising a metal complexed with a chelating group attached to a gastrin releasing peptide (GRP) receptor agonist, the gastrin releasing peptide receptor agonist including a bombesin agonist binding moiety, wherein said compound binds a gastrin releasing peptide receptor on a cell surface and is internalized within the cell and said compound has a structure of the formula X-Y-B wherein X is a metal chelating group, Y is a spacer group or covalent bond and B is a gastrin releasing peptide receptor agonist which includes a bombesin agonist binding moiety and Y is selected from the group consisting of at least one amino acid residue, a hydrocarbon chain and a combination thereof.
4. (Previously presented) The compound of claim 3 wherein X is selected from the group consisting of DOTA, DTPA, S4, N3S, N2S2, and NS3.
5. (Original) The compound of claim 4 wherein Y is selected from the group consisting of at least one amino acid residue, a hydrocarbon chain and a combination thereof and B is selected from the group consisting of BBN(7-14) and BBN(8-14).
6. (Previously presented) The compound of claim 4 wherein X is DOTA.
7. (Original) The compound of claim 6 wherein Y is selected from the group consisting of at least one amino acid residue, a hydrocarbon chain and a combination thereof and B is selected from the group consisting of BBN(7-14) and BBN(8-14).
8. (Original) The compound of claim 7 wherein Y is a combination of L-glutamine and a hydrocarbon chain.
9. (Original) The compound of claim 8 wherein Y is a combination of L-glutamine and a C1 to C10 hydrocarbon chain.
10. (Original) The compound of claim 9 wherein Y is selected from the group consisting of glycine, β -alanine, gamma-aminobutanoic acid, 5-aminovaleric acid (5-

Ava), 6-aminohexanoic acid, 7-aminoheptanoic acid, 8-aminoctanoic acid (8-Aoc), 9-aminononanoic acid, 10-aminodecanoic acid and 11-aminoundecanoic acid (11-Aun).

11. (Previously presented) The compound of claim 4 wherein X is N3S.
12. (Original) The compound of claim 11 wherein Y is selected from the group consisting of at least one amino acid residue, a hydrocarbon chain and a combination thereof and B is selected from the group consisting of BBN(7-14) and BBN(8-14).
13. (Original) The compound of claim 12 wherein Y is gly-ser-gly.
14. Canceled.
15. (Previously presented) A complex comprising a metal and a compound having a structure of the formula X-Y-B wherein X is a metal chelating group, Y is a spacer group or covalent bond and B is a gastrin releasing peptide (GRP) receptor agonist, the GRP receptor agonist including a bombesin agonist moiety and the metal is selected from the group consisting of transition metals, lanthanides, auger-electron emitting isotopes, and α -, β - or γ -emitting isotopes, wherein said complex binds a gastrin releasing peptide receptor on a cell surface and said complex is internalized within the cell.
16. (Previously Presented) The complex of claim 15 wherein the metal is selected from the group consisting of: 105Rh-, 99mTc-, 186/188Re-, 153Sm-, 166Ho-, 111In-, 90Y-, 177Lu-, 149Pm-, 166Dy-, 175Yb-, 199Au- and 117mSn-.
17. (Previously presented) The complex of claim 16 wherein X is selected from the group consisting of DOTA, DTPA, S4, N3S, N2S2, and NS3.
18. (Original) The complex of claim 17 wherein Y is selected from the group consisting of at least one amino acid residue, a hydrocarbon chain and a combination thereof and B is selected from the group consisting of BBN(7-14) and BBN(8-14).
19. (Previously presented) The complex of claim 16 wherein X is DOTA.
20. (Original) The complex of claim 19 wherein Y is selected is selected from the group consisting of at least one amino acid residue, a hydrocarbon chain and a

combination thereof and B is selected from the group consisting of BBN(7-14) and BBN(8-14).

21. (Original) The complex of claim 20 wherein Y is a combination of L-glutamine and a hydrocarbon chain.

22. (Original) The complex of claim 21 wherein Y is a combination of L-glutamine and a C1 to C10 hydrocarbon chain.

23. (Original) The complex of claim 22 wherein Y is selected from the group consisting of glycine, β -alanine, gamma-aminobutanoic acid, 5-aminovaleric acid (5-Ava), 6-aminohexanoic acid, 7-aminoheptanoic acid, 8-aminooctanoic acid (8-Aoc), 9-aminononanoic acid, 10-aminodecanoic acid and 11-aminoundecanoic acid (11-Aun).

24. (Original) The complex of claim 23 wherein Y is 8-aminoctanoic acid.

25. (Original) The complex of claim 23 consisting of 90Y-DOTA-8-Aoc-BBN(7-14)NH₂.

26. (Original) The complex of claim 23 consisting of 111In-DOTA-8-Aoc-BBN(7-14) NH₂.

27. (Original) The complex of claim 23 consisting of 177Lu-DOTA-8-Aoc-BBN(7-14) NH₂.

28. (Original) The complex of claim 23 consisting of 149Pm-DOTA-8-Aoc-BBN(7-14) NH₂.

29. (Original) The complex of claim 23 consisting of 90Y-DOTA-5-Ava-BBN(7-14)NH₂.

30. (Original) The complex of claim 23 consisting of 111In-DOTA-5-Ava-BBN(7-14) NH₂.

31. (Original) The complex of claim 23 consisting of 177Lu-DOTA-5-Ava-BBN(7-14) NH₂.

32. (Original) The complex of claim 23 consisting of 149Pm-DOTA-5-Ava-BBN(7-14) NH₂.

33. (Previously presented) The complex of claim 16 wherein X is N3S.

34. (Original) The complex of claim 33 wherein Y is selected from the group consisting of at least one amino acid residue, a hydrocarbon chain and a

combination thereof and B is selected from the group consisting of BBN(7-14) and BBN(8-14).

35. (Original) The complex of claim 34 wherein Y is gly-ser-gly.

36. (Original) The complex of claim 34 consisting of 99mTc-N3S-gly-ser-gly-BBN(7-14)NH2.

37. Canceled.

38. (Currently amended) A method of treating cancer in patients using radioisotope therapy by administering an effective amount of a pharmaceutical comprising a metal complex that binds a gastrin releasing peptide receptor on a cell surface and is internalized within the cell, said complex having a chelating group with a GRP receptor agonist, the GRP receptor agonist including a bombesin agonist moiety, the complex comprising a metal and a compound having a structure of the formula X-Y-B wherein X is a metal chelating group, Y is a spacer group or covalent bond and B is a gastrin releasing peptide receptor agonist which includes a bombesin agonist binding moiety.

39. (Currently amended) The method of claim 38 wherein the metal is selected from the group consisting of transition metals, lanthanides, auger-electron emitting isotopes, and α -, β - or γ -emitting isotopes.

40. (Original) The method of claim 38 wherein the metal is selected from the group consisting of: 105Rh-, 99mTc-, 186/188Re-, 153Sm-, 166Ho-, 111In-, 90Y-, 177Lu-, 149Pm-, 166Dy-, 175Yb-, 199Au- and 117mSn-.

41. (Previously presented) The method of claim 40 wherein X is selected from the group consisting of DOTA, DTPA, S4, N3S, N2S2, and NS3.

42. (Previously presented) The method of claim 41 wherein X is DOTA.

43. (Original) The method of claim 42 wherein Y is selected from the group consisting of at least one amino acid residue, a hydrocarbon chain and a combination thereof and B is selected from the group consisting of BBN(7-14) and BBN(8-14).

44. (Original) The method of claim 43 wherein Y is a combination of L-glutamine and a hydrocarbon chain.

45. (Original) The method of claim 44 wherein Y is selected from the group consisting of glycine, β -alanine, gamma-aminobutanoic acid, 5-aminovaleric acid (5-Ava), 6-aminohexanoic acid, 7-aminoheptanoic acid, 8-aminooctanoic acid (8-Aoc), 9-aminononanoic acid, 10-aminodecanoic acid and 11-aminoundecanoic acid (11-Aun).

46. (Currently amended) A method of imaging a patient by administering to a subject a diagnostically effective amount of a compound as set forth in claim 43.

47. (Original) The method of claim 46, wherein said method includes administering an effective amount of a complex comprising a metal and a compound having a structure of the formula X-Y-B wherein X is a metal chelating group, Y is a spacer group or covalent bond and B is a gastrin releasing peptide receptor agonist which includes a bombesin agonist binding moiety.

48. (Currently amended) The method of claim 47 wherein the metal is selected from the group consisting of transition metals, lanthanides, auger-electron emitting isotopes, and α -, β - or γ -emitting isotopes.

49. (Previously presented) The method of claim 48 wherein X is selected from the group consisting of DOTA, DTPA, S4, N3S, N2S2, and NS3.

50. (Previously presented) The method of claim 49 wherein X is N3S.

51. (Original) The method of claim 50 wherein Y is selected is selected from the group consisting of at least one amino acid residue, a hydrocarbon chain and a combination thereof and B is selected from the group consisting of BBN(7-14) and BBN(8-14).

52. (Original) The method of claim 51 wherein Y is gly-ser-gly.

53. (Currently amended) A method of forming a therapeutic or diagnostic compound that binds a gastrin releasing peptide receptor on a cell surface and is internalized within the cell, said method comprising the step of reacting a metal complexed with a chelating group with a GRP receptor agonist the receptor agonist including a bombesin agonist moiety, the complex having a structure of the formula X-Y-B wherein X is a metal chelating group, Y is a spacer group or covalent bond and B is a gastrin releasing peptide receptor agonist which includes a bombesin

agonist binding moiety, thereby forming a therapeutic compound that binds a gastrin releasing peptide receptor on a cell surface and is internalized within the cell.

54. Canceled.

55. (Currently amended) The method of claim 5453 wherein the metal is selected from the group consisting of transition metals, lanthanides, auger-electron emitting isotopes, and α -, β - or γ -emitting isotopes.

56. (Currently amended) The method of claim 5453 wherein the metal is selected from the group consisting of: 99mTc- and 186/188Re-.

57. (Original) The method of claim 56 wherein Y is selected is selected from the group consisting of at least one amino acid residue, a hydrocarbon chain and a combination thereof.

58. (Previously presented) The method of claim 57 wherein X is selected from the group consisting of DOTA, DTPA, S4, N3S, N2S2, and NS3.

59. (Original) The method of claim 58 wherein B is selected from the group consisting of BBN(7-14) and BBN(8-14).

60. (Original) The method of claim 59 wherein X is DOTA or a derivative thereof and Y is selected from the group consisting of glycine, β -alanine, gamma-aminobutanoic acid, 5-aminovaleric acid (5-Ava), 6-aminohexanoic acid, 7-aminoheptanoic acid, 8-aminooctanoic acid (8-Aoc), 9-aminononanoic acid, 10-aminodecanoic acid and 11-aminoundecanoic acid (11-Aun).

61. (Previously presented) The method of claim 59 wherein X is N3S and Y is gly-ser-gly.